
The National
Imagination Club

ANNOUNCEMENTS

Those of you who have tried to reach Bill Badger and have met with either no answer or just an answering machine, Protecto extends their deepest apologies. Bill has been transferred to a new position within Protecto. Those of you wishing to talk to someone about programming problems or needing technical assistance can contact Ken Whitmire at 312-695-7446. Do not try and call Bill anymore as he is unavailable.

Some of you have had questions about the Free club information you recieved with your computers. This is an inactive club in New York not The National APP Imagination Club. Only members of the National club are eligible for special price discounts as outlined in the protecto price sheets.

Questions and answers

Some of you have been wondering how to get a logical "AND" or "OR" function for IF...THEN statements. Here is one way to get them:

"AND"

The logical "AND" is usually written

IF J=7 AND I=6 THEN 500

which means both J has to be equal to 7 and I has to be equal to 6 before the program will jump to line 500.

The Imagination Machine uses a multiple IF statement to perform the same function.

It looks like this:

IF J=7 THEN IF I=6 THEN 500

"OF"

The logical "OF" is usually written

IF J=7 OF I=6 THEN 500

which means either J has to be equal to 7 or I has to be equal to 6 in order for the program to jump to line 500. The Imagination Machine can only check for numbers not letters, and this is performed like this:

IF (J-7)*(I-6)=0 THEN 500

which means that if either J is equal to 7 or I is equal to 6 the formula will equal 0 and the program will jump to 500.

*NOTE

You can not subtract a character string and get 0.
Therefore this method will only work with numbers.

Some requests have been made for books showing how to use the 6800 machine language. Here are some you may want to try:

Motorola 6800 Programming Reference Manual

source: Motorola Semiconductor Products
Box 20912
Phoenix, AZ 85036

The 6800 Microprocessor: A Self Study Course with applications
by Lance Leventhal

6800 Assembly Language Programming

by Lance Leventhal
source: Osborne & Associates, Inc.
P.O. Box 2036
Berkeley, CA 94702
(415) 548-2805

How do you set random musical notes?

It would be very easy if you could just get a random number between 1 and 7, set a variable to it, and place a MUSIC command in front of it like so:

```
10 A=INT(RND(0)*7)+1
20 MUSIC A
```

The reason this doesn't work is that the music function only works with a string variable.(*) Therefore we have to make our random number a string number between 1 and 7. (ie "5") we do this like so:

```
10 DIM A$(1)
20 J=INT(RND(0)*7)+49
30 A$=CHR$(J)
40 MUSIC A$
```

Line 10 dimensions our string variable to be at least 1 character in length.

Line 20 gets a random number between 49 and 55 and makes sure it is an integer.

Line 30 makes A\$ equal to the string character whose ascii code is equal to J. If you look on page 21 of the language reference guide you will see that J is equal to a number between 1 and 7

Line 40 simply performs the music function

Try this program

```
10 DIM A$(1)
20 J=INT(RND(0)*7)+1
30 X=INT(RND(0)*31)+1
40 Y=INT(RND(0)*15)+1
50 SHAPE=15
60 COLOR=J
70 PLOT X,Y
80 K=INT(RND(0)*7)+49
90 A$=CHR$(K)
100 MUSIC A$
110 GO TO 20
```

```

10 rem just a box of checkers -
11 rem no 'kinging' allowed (yet)
15 goto 5000: rem branch to mainline
5000 rem mainline control
5002 dim cb(6,7):ks(1): rem board mtrx + xtra variables
5004 poke 8193,60: rem mode set-up
5010 poke 8194,158: rem mode2: remove 4 tst/dehug
5015 rem bld shapes:bld board:put chkr
5020 gosub 600:gosub 500: gosub 400
5025 xa=0:ya=0:x=0:y=0: rem re-init co-ordinates
5030 gosub 145: music'15': rem output cursor
5035 p=2: rem left player
5040 gosub 300: rem play game
5045 if ks="i" then 5060: rem play again?
5050 if p=2 then p=1: goto 5040
5055 goto 5035: rem left again
5060 call17046:poke 8194,30:poke 40960,3:poke 40961,224:rem cusr @ lo-lft
5065 input "want to play again? (y/n)",ks
5070 if ks="y" then 5010
5075 stop
6000 rem variables used by this pgm:
6001 rem x,y - loop controls, pointers to matrix 'cb'
6002 rem xa,ya,ra - row/col co-ordinates to shape table
6003 rem and/or screen map; row additive
6004 rem sh,sx - start/stop pointers to shape table
6005 rem sh,sl - hi/lo shape color values
6006 rem hh,by,hg,br,yy,yb,gb,rb - are shape #'s and
6007 rem indicate color of shape (color table 0)
6008 rem i.e. hh=blue/blue; gh=green/blue; br=blue/red
599:
600 rem build shapes
601 sh=512:sx=519:rem shape tbl starts at loc 512
602 gr=0:ye=85:h1=170:rd=255: rem grn,yelo,blu,red
605 xa=0:ya=0:ra=8:rem set additives
610 for x=1to8: rem 8 shapes
615 on x gosub 625,630,635,640,645,650,655,660
620 sh=sh+16:sx=sh+7:nextx: rem next block
625 sh=bl:sl=0:gosub125:hh=0:return
630 sl=ye-h1:gosub125:rb=1:return
635 sl=(-h1):gosub125:hg=2:return
640 sl=rd-h1:gosub125:br=3:return
645 sh=ye:sl=0:gosub125:yy=4:return
650 sl=h1-ye:gosub125:yb=5:return
655 sh=gr:sl=bl:gosub125:gb=6:return
660 sh=rd:sl=bl-rd:gosub125:rp=7:return
499:
500 rem build board
501 sh=hh:sl=0:rem start w/ blu sqr
505 sb=0:sx=3:xa=0:ya=0:ra=32:rem set start, controls
510 for y=0to5: rem only 6 rows
515 for x=0to7: rem hut 8 cols
520 gosub125:ch(y,x)=sh:rem init mtrx
525 if sh=hh then sh=yy: goto535: rem switch color
530 sh=hh
535 xa=xa+4:nextx
540 ya=ya+64:xa=0:rem re-init 'x' additive

```

```

545 if sh=bb then sh=yy:nexty
550 sh=hh:nexty:return
399:
400 rem put checkers on board
401 ya=0:xa=0:ra=32:rem set r/c additives
405 sh=bg:sl=4:rem strt w/ gin chkr;lo-shape is 4 away
410 for y=0 to 5:rem only 6 rows this board
415 for x=0 to 5:step 2
420 if y=0 then 435
425 on y goto 430,435,430,435,430,435
430 if x=0 then x=1:xa=xa+4
435 gosub 120:cb(y,x)=sh:rem save chr id in mtrx
440 xa=xa+8:nextx
445 ya=ya+6:xa=0
450 if y=1 then y=3:ya=ya+128:sh=hl:rem switch chkr color
455 nexty:return
299:
300 rem read plays move
305 ks=keys(p):if ks="" then 305:rem wait
310 if ks="i" then return:rem hack to main
311 if ks="0" then return
315 if ks="2" then gosub 160:gosub 145:goto 300:rem rmv chkr
316 if ks="5" then gosub 165:gosub 140:gosub 145:goto 300:rem rpl chkr
320 k=asc(ks)-48:gosub 180:rem rmv crsr
325 on k gosub 200,205,215,225,,235,240,245,255
326 rem test overflow
330 if x>7 if k=9 then ya=ya+64:y=y+1
335 if x>7 if k=3 then ya=ya-64:y=y-1
340 if x>7 then x=7:xa=28:music"/7/7"
345 if x<0 if k=7 then ya=ya+64:y=y+1
350 if x<0 if k=1 then ya=ya-64:y=y-1
355 if x<0 then x=0:xa=0:music"/1/1"
360 if y>5 if k=3 then xa=xa-4:x=x-1
365 if y>5 if k=1 then xa=xa+4:x=x+1
370 if y>5 then y=5:ya=320:music"*5*5"
375 if y<0 if k=9 then xa=xa-4:x=x-1
380 if y<0 if k=7 then xa=xa+4:x=x+1
385 if y<0 then y=0:ya=0:music"*7*7"
390 gosub 145:goto 300
199:
200 rem adjust x/y additives
201 x=x-l:xa=xa-4
205 y=y+l:ya=ya+64:return
215 x=x+l:xa=xa+4
220 y=y+l:ya=ya+64:return
225 x=x-l:xa=xa-4:return
235 x=x+l:xa=xa+4:return
240 x=x-l:xa=xa-4
245 y=y-l:ya=ya-64:return
255 x=x+l:xa=xa+4
260 y=y-l:ya=ya-64:return
100 rem most frequently called sub-rtns follo
102 rem set hi/lo shape from mtrx
105 sh=cb(y,x)
110 if sh>=by if sh<yy then sl=4:goto 120
115 sl=0

```

```

120 sh=1;sx=2;rem crsr/cbkr size
125 for i =sh to sx; rem put obj on hrd/scrn
130 pokei+xa+ya,sh;rem put hi shape
135 pokei+xa+ya+ra,sh+sl;rem put lo shape
140 nexti;return
145 sh=hy;sl=4;rem ylo crsr
150 if ch(y,x)=yythen sh=yb;sl=(-4);rem hlu crsr
155 gosub120;return
160 cb(6,0)=ch(y,x):ch(y,x)=0;return;rem save chkr
165 ch(y,x)=cb(6,0);return;rem rplc chkr

```

checkers facility

submitted by Don Schmidt

Neptune, N. J.

instructions:

1. load program, type 'run,' Return Key.
 - a) program builds board, puts checkers on board, and a yellow cursor.
2. 'left' starts.
3. digits 1-9 (except 5) control movement.
 - a) move cursor to desired square, hit 'c' key to 'mark,' and remove checker.
 - b) move cursor to desired square, hit '5' to put 'marked' checker at this new location. If opponent's player was 'jumped,' position cursor on 'jumped checker' and hit '5' again to remove the checker.
4. Hit '0' (zero) to switch players.
5. Hit 'en' to end game.

↖ 7	8 ↑	↗ 9	0
← 4	5	→ 5	CL
↙ 1	2 ↓	3 ↘	SR



Product Catalog and Price List

COMPUTER PRODUCTS	JANUARY 1, 1982	LIST PRICE	*FACTORY PRICE
23K APF IM-1 COMPUTER. Includes 14,000 Bytes ROM with BASIC built in, 9000 Bytes User RAM, Color, Sound. Professional 53 keyboard, Two controllers, Two 10 key numeric pads, High speed cassette, A. C. adapter, R. F. Modulator, T.V. switch box. Accepts TAPE-DISK-PLUG in cartridges. It is plug in expandable. 90 days parts and labor warranty, Owners guide, BASIC language manual, Beautiful Black & White Console Case.		\$599.00	\$239.00
23K APF IM-1 COMPUTER FACTORY PACK. Everything you get for \$239.00 plus "BASIC TUTOR program" on two tape cassettes with manual to teach you how to cut programming time, "PROGRAMMING AND TECHNICAL ASSISTANCE MANUAL" for Graphics, Machine Language-Memory maps, Schematics and Parts List. Also you get the popular "SPACE DESTROYERS Program."		695.00	289.00
BE-1 BUILDING BLOCK INTERFACE. This plug in interface allows you to use the 23K IM-1 computer to its fullest degree. It contains 4 universal ports to add: RAM memory, Printers, Telephone Modem, and Floppy Disk drives. (\$5.00 shipping)		199.00	79.50
8K-RAM EXPANSION. Plug into interface port to increase your RAM memory 8192 Bytes. (3.00 shipping)		129.00	79.50
SI-232 SERIAL INTERFACE. Plug in to interface port to connect printers and telephone modems. (3.00 shipping)		149.00	79.50
MC-80 EPSON LINE PRINTER. Deluxe quality: Impact dot matrix-bi-directional, 40-80-66 132 columns-uses regular paper. Includes serial port. (20.00 shipping)		726.00	499.00
TM-150 TELEPHONE MODEM. Best quality: Transmit receive full duplex, switched! Originate-off-answer. (4.00 shipping)		199.00	129.00
FI-100 DISK INTERFACE. Plug into interface port - allows you to connect the floppy disk drive. (\$3.00 shipping)		149.00	79.50
D-100 MINI FLOPPY DISK DRIVE. Plugs into interface - has its own power supply and controller - uses no RAM memory, give you 72,000 Bytes of additional data storage, plus instant loading and accessing of data. (7.50 shipping)		599.00	399.00

PROGRAMMING AND LANGUAGE AIDS

	FACTORY PRICE	**CLUB PRICE
BASIC TUTOR. This program includes two cassette tape programs with a 243 page manual - Teaches you how to use the simplified Level II BASIC cuts programming time - a must for beginners and professionals.	49.95	29.95
PROGRAMMING AND TECHNICAL ASSISTANCE MANUAL. 100 pages, graphics, memory maps, machine language, schematics, and parts list.	19.95	14.95
6800 MACHINE LANGUAGE EDITOR AND ASSEMBLER. This disk program is used to create source code file - this file is then used as the assembler - simplifies entry or editing, adding, deleting, change in lines, etc.	59.95	29.95
6800 MACHINE LANGUAGE DISASSEMBLER. This disk enhances creation, debugging, and recording of machine language.	19.95	14.95
DISK COPIER PROGRAM. Allows you to make duplicate copies of all disk programs written for the APF-IM-1.	19.95	9.95
*NATIONAL COMPUTER CLUB MEMBERSHIP. Allows special discount prices - programming assistance-new developments-program exchange-factory sponsored.		15.00

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- *Add \$3.00 for postage - if
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(FACTORY DIRECT RELIABILITY)

BOX 550, BARRINGTON, ILLINOIS 60010 - Phone 312/382-5244 to order

MANAGEMENT PROGRAM TAPES		FACTORY PRICE	**CLUB PRICE
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<u>BAR CHARTS</u> Color charts for comparisons, year to year category by category - See your situation at a glance!		19.95	14.95
<u>TYPING TUTOR</u> Learn typing at your own speed-unique program-Computer designs and changes to fit your ability.		29.95	19.95
<u>CHECK BOOK BUDGET MANAGER</u> Faster way to balance your check book- Balance your budget - Keep tax records, etc!		29.95	19.95
<u>BUDGET MANAGER</u> Day by day, week by week, 3 categories, including food, medical, automotive - even summary reports.		19.95	14.95
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<u>SPACE SIZE AND SURFACE GUIDE</u> Great for home improvements, figure your material needs - How much Paint - Carpeting - Fertilizer, etc.		29.95	19.95
<u>MATH TUTOR</u> Great for improving math skills at any age level, based on personal ability - a private tutor with lots of fun.		29.95	19.95
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<u>SPELLING DUEL</u> Challenging and educational. Great fun with combination spelling and crossword game!		19.95	14.95
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<u>BACKGAMMON</u> This ancient game has never been more popular - and it really comes to life in all the colors of your TV screen.		19.95	14.95
<u>GATENA</u> Surrounded your opponent, but watch out for the last minute reverses		19.95	14.95
<u>WARRANTY - 90 DAYS PARTS AND LABOR</u> If unit fails within 90 days of purchase, send unit and sales receipt prepaid via United Parcel Service to PROTECTO ENTERPRISES at address shown. We will ship you a replacement unit within 48 hours of receipt prepaid.			
<u>SERVICE MANUAL</u> Detailed service instructions and pictures for those who want to service their computer.		19.95	14.95

NATIONAL "IMAGINATION" COMPUTER CLUB

(FACTORY SPONSORED)

1982

MEMBERSHIP APPLICATION

Expires 12-31-82

PURPOSE: KEEP OWNERS AND PROSPECTIVE OWNERS INFORMED ON A NATIONAL BASIS ABOUT THE FANTASTIC CAPABILITIES OF THE NEW 23K APF IM-1 COMPUTER

INFORMATION FURNISHED: LATEST PRODUCT DEVELOPMENTS TO ENHANCE AND EXPAND THE CAPABILITIES OF THE NEW 23K APF IM-1 COMPUTER. KEEPING UP WITH LATEST DEVELOPMENTS AND PROBLEMS FROM ALL SOURCES.

OWNER EXPERIENCES: BUGS - IMPROVEMENTS - EXPANSION IDEAS - PROGRAM EXCHANGE ETC.

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INCLUDE ANNUAL FEE \$15.00. MAKE CHECK PAYABLE TO JOE BADGER, NICC (NATIONAL "IMAGINATION" COMPUTER CLUB)

AS A CLUB MEMBER YOU WILL BE ENTITLED TO A SPECIAL CLUB PRICE ON MANY ITEMS. THIS CLUB PRICE WILL NOT BE NO LESS THAN 15% ON ALL PROGRAMS. YOUR SAVINGS SHOULD EASILY PAY YOUR 1982 CLUB MEMBERSHIP FEE.

A MONTHLY COMPUTER CLUB LETTER IS ISSUED, STARTING FEBRUARY 1982. IF NEW INFORMATION IS IMPORTANT ENOUGH WE WILL ISSUE MORE FREQUENT LETTERS.

MAIL TO: CLUB PRESIDENT
JOE BADGER
515 W. SHADY LANE
BARRINGTON, IL 60010
PHONE: 312/382-5244

Other Special News:

Protecto Enterprises apologizes for delays in shipping orders. Their objective is always to ship the following day after an order is placed and to give two to seven days delivery on phone orders anywhere in the USA.

The problem on delayed orders was caused when the 28 below zero weather hit the New York area. It froze the water main on the third floor of the warehouse where the 23K IM-1 computers and peripherals were stored on the first floor. This completely flooded the first floor and ruined all the computers and peripherals. We had to bring in all new merchandise to replace the computers causing a 60 to 90 day delay. At the same time we sold out all the computers (several thousand) we planned for this sale! (We planned this sale for six months and sold out in 30 days.)

We are now shipping all orders. We are shipping about two weeks later than we promised. We still have not been able to get any peripherals and do not expect to be able to ship peripherals back orders before June 1, 1982.

We do have all the programs in stock we show on our price list as they were stored in another warehouse and were not affected by the flood. There are a lot of good programs available from other firms, and we will advise club members of these programs in future club letters.

So please have patience. We are dedicated to giving APF IM-1 owners the best possible service and continued program support.

*P.S. WE NEED PROGRAMS AND SUGGESTIONS FROM
YOU TO MAKE OUR CLUB SUCCESSFUL!!*